



State Revolving Fund Loan Programs

Drinking Water, Wastewater, Nonpoint Source

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

CITY OF LAFAYETTE

- (1) WWTP AERATION BLOWER SYSTEM IMPROVEMENTS;**
 - (2) PARKING LOT LIFT STATION ELIMINATION & BIORETENTION BASIN;**
 - (3) PEARL RIVER LIFT STATION SEWER SEPARATION**
- STATE REVOLVING FUND PROJECT #: WW 09 35 79 03**

DATE: August 10, 2009

TARGET PROJECT APPROVAL DATE: September 10, 2009

I. INTRODUCTION

The above entity has applied to the Clean Water State Revolving Fund (CWSRF) Loan Program for a loan to finance all or part of the wastewater project described in the accompanying Environmental Assessment (EA). As part of facilities planning requirements, an environmental review has been completed which addresses the project's impacts on the natural and human environment. This review is summarized in the attached EA.

II. PRELIMINARY FINDING OF NO SIGNIFICANT IMPACT (FNSI)

The CWSRF has evaluated all pertinent environmental information regarding the proposed project and determined that an Environmental Impact Statement is not necessary. Subject to responses received during the 30-day public comment period, and pursuant to Indiana Code 4-4-11, it is our preliminary finding that the construction and operation of the proposed facilities will result in no significant adverse environmental impact. In the absence of significant comments, the attached EA shall serve as the final environmental document.

III. COMMENTS

All interested parties may comment upon the EA/FNSI. Comments must be received at the address below by the deadline date above. Significant comments may prompt a reevaluation of the preliminary FNSI; if appropriate, a new FNSI will be issued for another 30-day public comment period. A final decision to proceed, or not to proceed, with the proposed project shall be effected by finalizing, or not finalizing, the FNSI as appropriate. Comments regarding this document should be sent within 30 days to:

Max Henschen
Senior Environmental Manager
State Revolving Fund
100 N. Senate Ave. IGCN 1275
Indianapolis, IN 46204
317-232-8623; mhensche at ifa.in.gov

ENVIRONMENTAL ASSESSMENT

I. PROJECT IDENTIFICATION

Project Name and Address:	City of Lafayette – WWTP Aeration Blower System Improvements, Parking Lot Lift Station Elimination, and Pearl River Sewer Separation Projects 20 N. 6 th Street Lafayette, IN 47901
SRF Project Number:	WW09 35 79 03
Authorized Representative:	Mr. Gary Henriott, President Board of Public Works and Safety

II. PROJECT LOCATION

These three proposed projects are all in Fairfield Township in Lafayette, Tippecanoe County. The proposed **Aeration System Improvements** project will occur at the Lafayette Wastewater Treatment Plant (WWTP) at 1700 Wabash Avenue. The WWTP is in the Lafayette West USGS 7.5 minute quadrangle in Township 23N, Range 4W, in the north central part of Section 31. See figures 1 and 2.

The proposed **Parking Lot Lift Station Elimination Project** will occur at the city's Parking Lot Lift Station site at the corner of North Street and Second Street in the Lafayette West quadrangle in Township 23N, Range 4W and NW ¼ of the SW ¼ of the SE ¼ of Section 20. See figures 3, 4 and 5.

The **Pearl River Lift Station Sewer Separation Project** will occur at the site of the city's Pearl River Lift Station, located at 102 Walnut Street in the Lafayette West quadrangle in Township 23N, Range 4W and the NE ¼ of the NE ¼ of the NW ¼ of Section 29. See figures 3, 6, 7 and 8.

III. PROJECT NEED AND PURPOSE

Aeration Blower System Improvement: The WWTP was upgraded in 2004. Those upgrades expanded the secondary treatment process, including a new aeration blower and fine pore diffuser equipment, as well as construction of a new blower building. Since those upgrades, technology related to high-efficiency blower equipment and aeration controls has advanced. The proposed improvements include the addition of one high efficiency blower to allow energy savings related to the aeration process. The city anticipates that this upgrade will improve efficiency by 50 percent.

Parking Lot Lift Station Elimination: Currently, three of the seven major Lafayette interceptors discharge into the Parking Lot Lift Station. When that lift station reaches its hydraulic capacity and storm/wastewater flows back up, the Combined Sewer Overflows (CSOs) upstream of the station begin to discharge into the Wabash River. This lift station has become a “bottleneck” in the collection system and an operation and maintenance concern. The city’s CSO Long Term Control plan identified the elimination of this lift station as a priority. The Parking Lot Lift Station has reached the end of its useful life and its capacity. At the completion of the Pearl River CSO Storage and Conveyance Tunnel project, scheduled for completion by December 2009, the Parking Lot Lift Station can be eliminated. The elimination will reduce the frequency of CSOs into the Wabash River and will allow the city to accept additional industrial flow from this part of the collection system. The project will also include converting the lift station site into a stormwater bioretention basin to help reduce stormwater from entering the combined sewer system, thus reducing the CSO volume entering the Wabash River.

Pearl River Sewer Separation Project: The Pearl River brick sewer under the railroad tracks will be abandoned upon the completion of the Pearl River CSO Storage and Conveyance Tunnel project mentioned above. Flow that used to go to the brick sewer will be diverted into the new 120-inch diameter CSO storage and conveyance tunnel, currently under construction. The proposed sewer separation project will use the existing conduit under the railroad crossing to install a new storm sewer that will separate the area upstream of the railroad tracks (i.e., east of the railroad tracks) and convey all the stormwater drainage from the area just east of the railroad tracks and also from the drainage area around the railroad tracks. These proposed storm sewers will eliminate stormwater from entering the combined sewer in this area, thus, in conjunction with the CSO storage and conveyance tunnel (currently under construction), significantly decreasing the amount of combined sewer overflows entering the Wabash River.

IV. PROJECT DESCRIPTION

Aeration Blower System Improvements: The proposed improvements include the addition of one single-stage high efficiency blower/motor and related electrical and control equipment to be installed in the existing blower building. Additionally, the improvements include the addition of dissolved oxygen monitoring equipment, air flow control valves and controls to allow blower and air flow control to optimize aeration tank dissolved oxygen levels.

Parking Lot Lift Station Elimination: The proposed project includes:

- Removal of all equipment from the Parking Lot Lift Station;
- Demolition of the lift station structure to a minimum of five feet below grade;
- Backfilling the remaining below grade structure with flowable fill concrete;
- Conversion of the demolished Parking Lot Lift Station site into a stormwater bio-retention basin.

Pearl River Sewer Separation Project: The proposed project includes:

- Demolition of the 120-inch diameter CSO outfall sewer;
- Demolition of the CSO diversion structure;
- Installation of a 24-inch diameter storm sewer from upstream of the Pearl River brick arch sewer, under the railroad tracks inside the Pearl River brick arch sewer, to the Pearl River Lift Station site;

- Installation of a 36-inch diameter storm sewer from the existing storm sewer, that conveys stormwater from the railroad tracks drainage area;
- Installation of a 42-inch storm sewer that will convey the stormwater from the new 24-inch and new 36-inch diameter storm sewers to the Wabash River;
- Backfilling the area to grade around the Pearl River Lift Station and CSO Screening Structure;
- Final paving at the Pearl River Lift Station and CSO Screening Structure;
- Installation of the final site fencing around area.

V. ESTIMATED PROJECT COSTS AND FUNDING

A. Selected Plan Estimated Cost Summary

Construction and Equipment Costs

Aeration Blower System Improvements

Blower Equipment	\$ 800,000
Air Flow Control Valves/Operators	150,000
DO Monitoring Equipment	150,000
Electrical	50,000
Instrumentation and Controls	50,000

Parking Lot Lift Station Elimination

Demolition of Parking Lot Lift Station	175,000
Stormwater Bio-retention Basin	75,000

Pearl River Sewer Separation Project

Installation of storm sewers	255,000
Pearl River Lift Station final site improvements	<u>270,000</u>
Construction Sub-Total	\$1,975,000
Contingency (10%)	<u>197,500</u>
Construction Total	\$2,172,500

Non-Construction Costs

Administrative and Legal	35,000
Engineering Design	175,000
Engineering Construction	80,000
Project Inspection	<u>90,000</u>
Non-Construction Sub-Total	\$ 380,000

Total Estimated Cost \$2,552,500

- B.** Lafayette will finance the project through a 20-year State Revolving Fund (SRF) Loan Program loan at an interest rate to be determined at loan closing. Monthly user rates and charges may need to be analyzed to determine if adjustments are required for loan repayment. Lafayette plans to incorporate energy efficiency in the selection of the Aeration Blower System Improvement and green infrastructure by converting the existing Parking Lot Lift Station site to a bioretention pond to reduce stormwater drainage to the combined sewer in the area.

VI. DESCRIPTION OF EVALUATED ALTERNATIVES

Aeration Blower System Improvements

No Action: The no action alternative to the proposed project would result in more energy consumption and no system to monitor dissolved oxygen in the aeration system. For these reasons, this alternative was rejected.

Optimum Operation: The city currently employs optimum operation at the WWTP, but energy savings and oxygen monitoring can only come from implementation of the proposed project. This alternative was also rejected.

Selected Alternative: To reduce energy use and the WWTP's carbon footprint, as well as to monitor dissolved oxygen in the aeration system, the city has selected to implement the proposed project.

Parking Lot Lift Station Elimination

No Action: If no action is taken, the city would continue to direct flow from the Parking Lot Lift Station into the 120-inch CSO storage and conveyance tunnel. However, the city would still need to maintain an aging lift station, possibly containing raw sewage, creating odor problems and other public health concerns in the downtown area. This alternative was not pursued because it did not reduce the hydraulic overloading to the lift station or reduce the amount of stormwater into the combined sewer system.

Optimum Operation: This alternative is currently being employed at the existing facility, but more is needed to address the CSO and hydraulic overloading.

Selected Alternative: The city will demolish the lift station, redirect flow to the Pearl River CSO Storage and Conveyance Project currently in construction, reduce the activation of upstream CSOs and install a bioretention basin to reduce the amount of stormwater entering the combined sewers, thus reducing CSOs.

Pearl River Sewer Separation Project

No Action: If no action is taken, the city would continue to send combined flow to the Pearl River Lift Station, resulting in future CSOs once the lift station has reached capacity. This alternative was rejected because it did not reduce the likelihood of future CSOs.

Optimum Operation: This alternative is currently being employed at the existing facility, but this does not reduce the CSO volume or frequency.

Selected Alternative: The city will separate the sewers to reduce CSOs and accept more industrial flows.

VII. ENVIRONMENTAL IMPACTS OF THE FEASIBLE ALTERNATIVES

A. Direct Impacts of Construction and Operation

Disturbed and Undisturbed Land: The three projects will occur in existing buildings or on land previously disturbed by construction activity.

Structural/Historical Resources (Figures 9, 10, and 11): The projects will not will not alter, demolish or remove historic properties. Any visual, audible or atmospheric effects will be temporary. The SRF's finding pursuant to Section 106 of the National Historic Preservation Act is: "no historic properties affected."

Plants and Animals: The projects will not affect state or federally-listed endangered species.

Prime Farmland: The proposed projects will not affect prime farmland.

Surface Waters and Wetlands: The proposed projects will not affect wetlands or Outstanding State Resource Waters, Exceptional Use Streams, the Lake Michigan Coastal Zone or Natural, Scenic, and Recreational Rivers and Streams.

100-Year Floodplain: The proposed Aeration Blower System Improvements project will be implemented at the WWTP site, which is surrounded by a levee to protect the facility from a 100-year flood. The proposed Parking Lot Lift Station Elimination Project is not in the 100-year floodplain. A small portion of the proposed Pearl River Sewer Separation project falls within the 100-year floodplain, but not within the 100-year floodway. Proposed sewers will not displace floodwaters. The project will be designed to meet all of Tippecanoe County's stipulated requirements during construction.

Groundwater: Neither the Aeration Blower System Improvements project nor the Parking Lot Lift Station Elimination project will affect groundwater. Dewatering will be necessary to construct the Pearl River Sewer Separation Project. No dewatering flows will enter a waterway without first being filtered or settled. The groundwater table will be restored to normal levels following construction.

Air Quality: The proposed projects will result in minor short-term impacts on air quality.

Open Space and Recreational Opportunities: The proposed projects will neither create nor destroy open space and recreational opportunities. The project will not affect National Natural Landmarks.

B. Indirect Impacts

The city's Preliminary Engineering Reports (PER) states: *Lafayette, through the authority of its council, planning commission or other means will ensure that future development, as well as future collection system or treatment works projects connecting to SRF-funded facilities will not adversely impact archaeological/structural resources, wetlands, wooded areas, or other sensitive environmental resources. Lafayette will require new development and treatment works projects to be constructed within the guidelines of the U.S. Fish and Wildlife Services, IDNR, IDEM, and other environmental review authorities.*

C. Comments by Environmental Review Authorities

The Natural Resources Conservation Service, in two letters dated March 9, 2009, noted that none of the proposed projects will cause a conversion of prime farmland.

This document is the first notice to the U.S. Fish and Wildlife Service, the IDNR Environmental Unit and the IDNR Division of Historic Preservation and Archaeology.

VIII. MITIGATION MEASURES

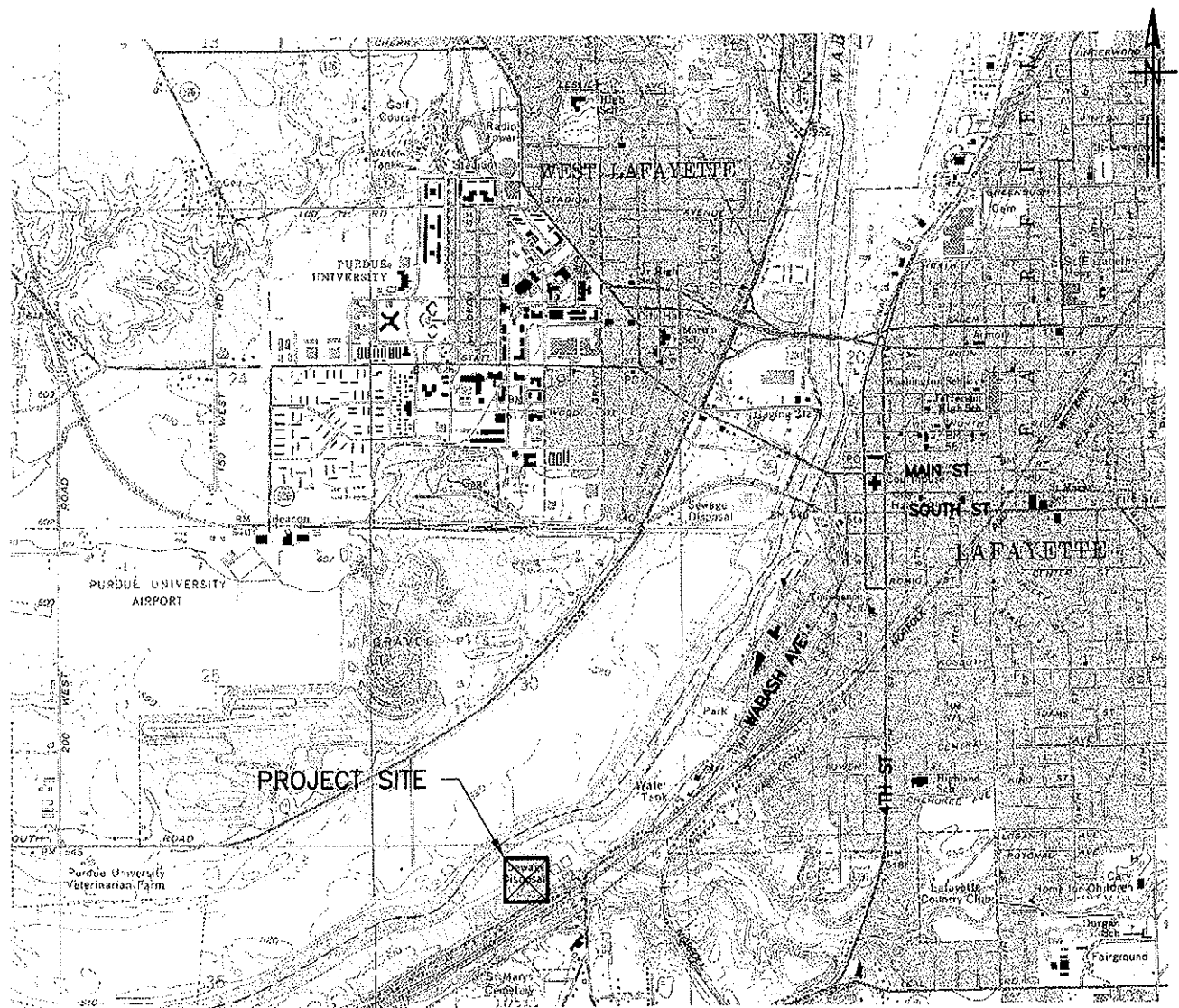
The city's **Aeration Blower System Improvements** PER states: *Generally, the proposed project is not anticipated to require significant excavation or other disturbance of land. The project primarily will be constructed inside an existing building and process tanks. The following specific mitigation efforts will be made: 1) Construction traffic will be directed to use access routes and entrances to the facility in an effort to minimize impacts on area adjacent to the plant, and 2) Construction equipment will be muffled where possible and the construction will be scheduled for daylight hours only.*

The city's PER addressing the **Parking Lot Lift Station Elimination and Pearl River Sewer Separation Projects**, states:

- 1. The project plan and layout will be designed to fit the local topography and soil conditions in accordance with Lafayette's Storm Water Management Ordinance 2005-08.*
- 2. Any land grading and excavating will be kept to a minimum in order to reduce runoff and erosion problems.*
- 3. Appropriate structural (e.g.: sediment basins, staked hay bales, riprap) or agronomic (e.g., seeding, mulching, liming, fertilizing) practices to control runoff and sedimentation will be provided during and after construction, if needed.*
- 4. The plan will be consistent with applicable state and local ordinances and federal non-point source pollution control guidance.*
- 5. Construction entrances, roadways and staging areas will be stabilized prior to construction with crushed stone to reduce sediment transport.*
- 6. Construction equipment will be muffled where possible and the construction will be scheduled for daylight hours only.*

IX. PUBLIC PARTICIPATION

A properly noticed public hearing was held on Tuesday, April 7, 2009 at the Lafayette Council Chambers at 20 North 6th Street. No written comments were received in the 5-day comment period after the hearing.



NOTE:

1. PROJECT SITE IS CONTAINED WITHIN LAFAYETTE WASTEWATER TREATMENT PLANT AND FOUND ON LAFAYETTE WEST QUADRANGLE MAP IN TOWNSHIP 23N, RANGE 4W, AND SECTION 31.

PROJECT LOCATION



FIGURE 1



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LAFAYETTE, INDIANA
AERATION BLOWER PER
MARCH 2009

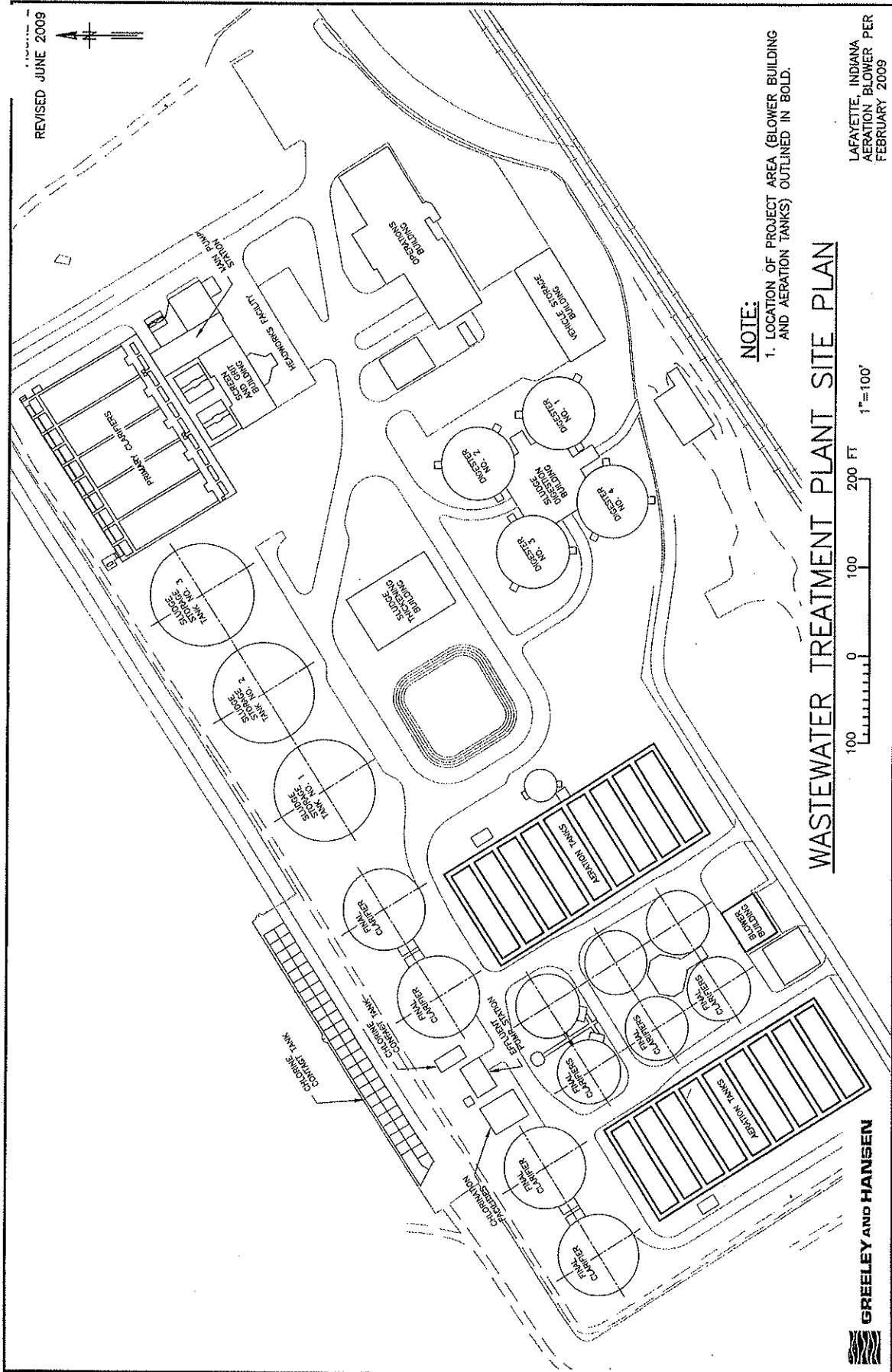
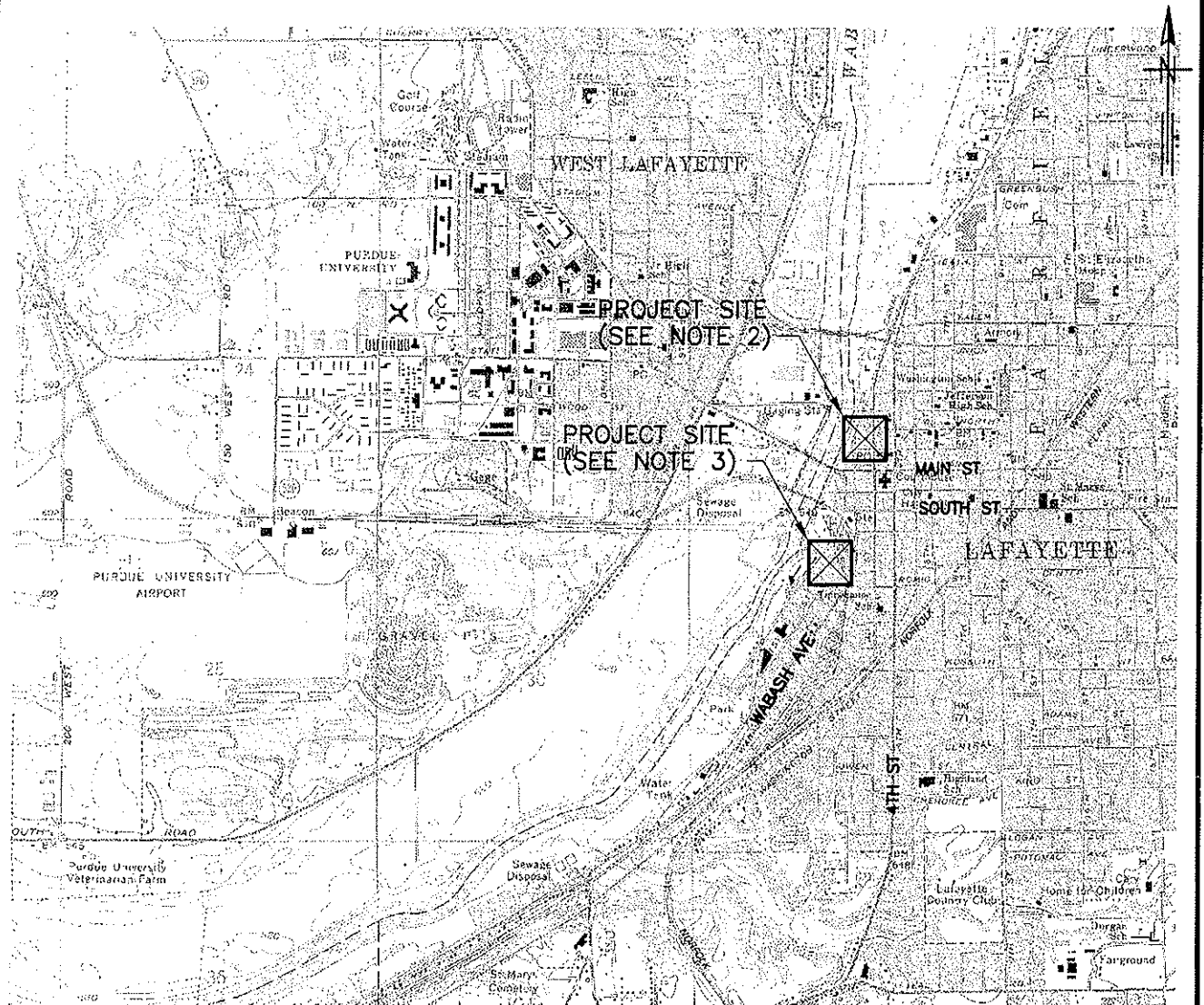


FIGURE 2



NOTES:

1. BOTH PROJECT SITES ARE CONTAINED ON LAFAYETTE WEST, IN USGS QUADRANGLE MAP.
2. LIFT STATION ELIMINATION PROJECT CONTAINED IN TOWNSHIP 23N, RANGE 4W, AND SECTION 20.
3. SEWER SEPARATION PROJECT SITE IS CONTAINED IN TOWNSHIP 23N, RANGE 4W, AND SECTION 29.

PROJECT AREA

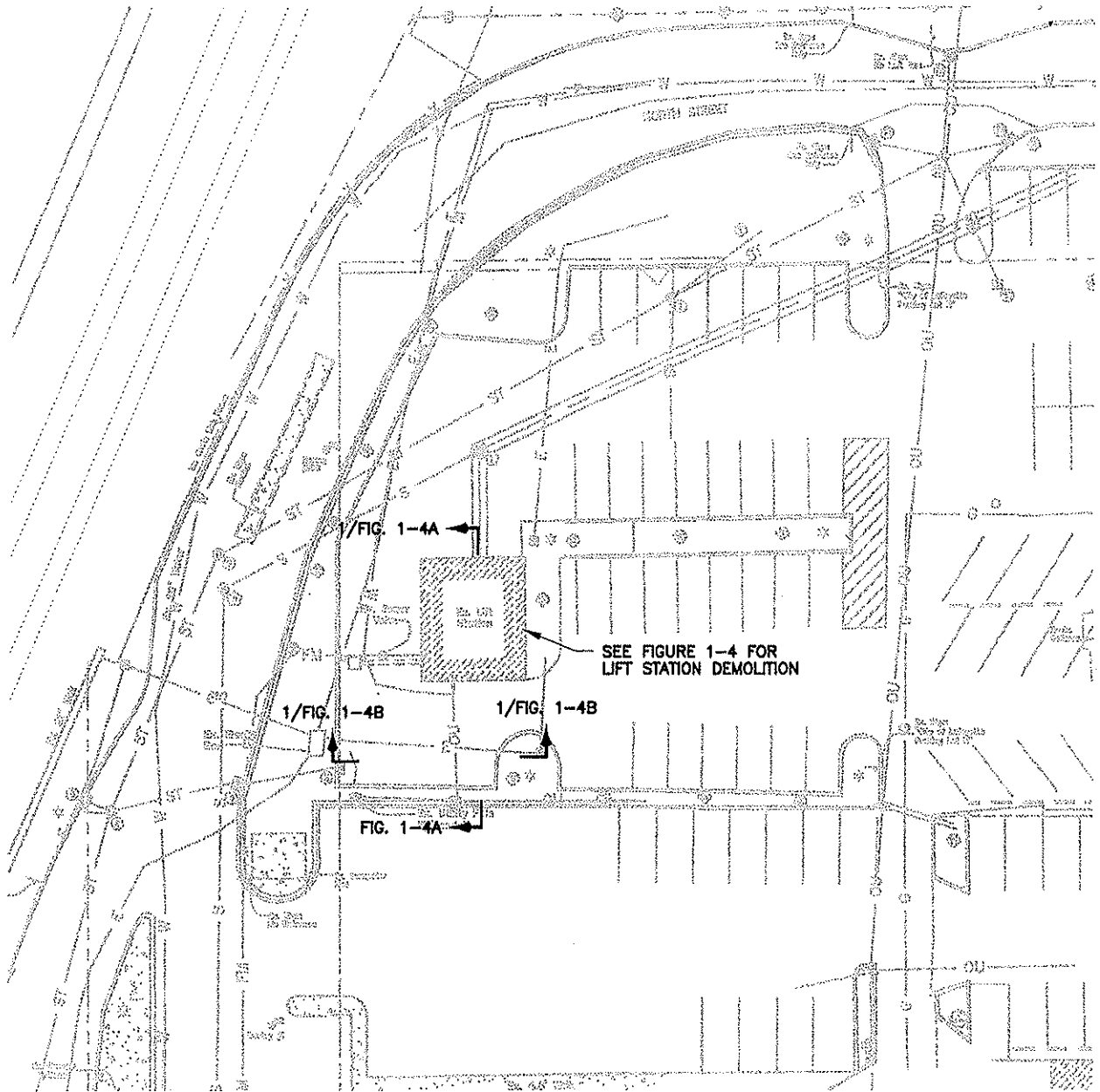


GREELEY AND HANSEN

FIGURE 3

LAFAYETTE, INDIANA
LIFT STATION ELIMINATION
AND SEWER SEPARATION PER
MARCH 2009

REVISED JUNE 2009



PARKING LOT LIFT STATION EXISTING SITE PLAN

40 0 40 80 FT 1"=40'

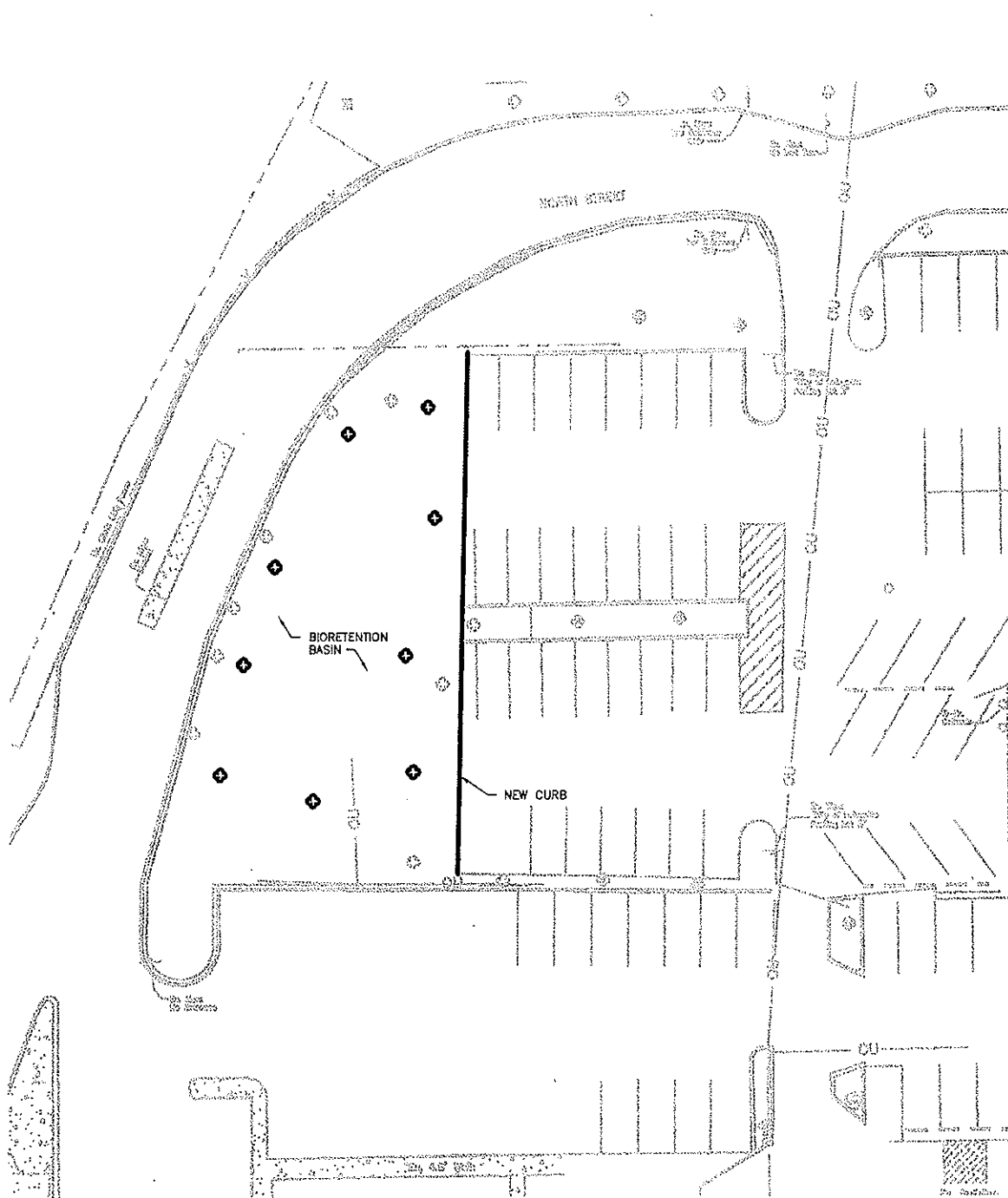


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FIGURE 4

LAFAYETTE, INDIANA
LIFT STATION ELIMINATION
AND SEWER SEPARATION PER
MARCH 2009

REVISED JUNE 2009



BIORETENTION BASIN SITE PLAN

40 0 40 80 FT 1"=40'

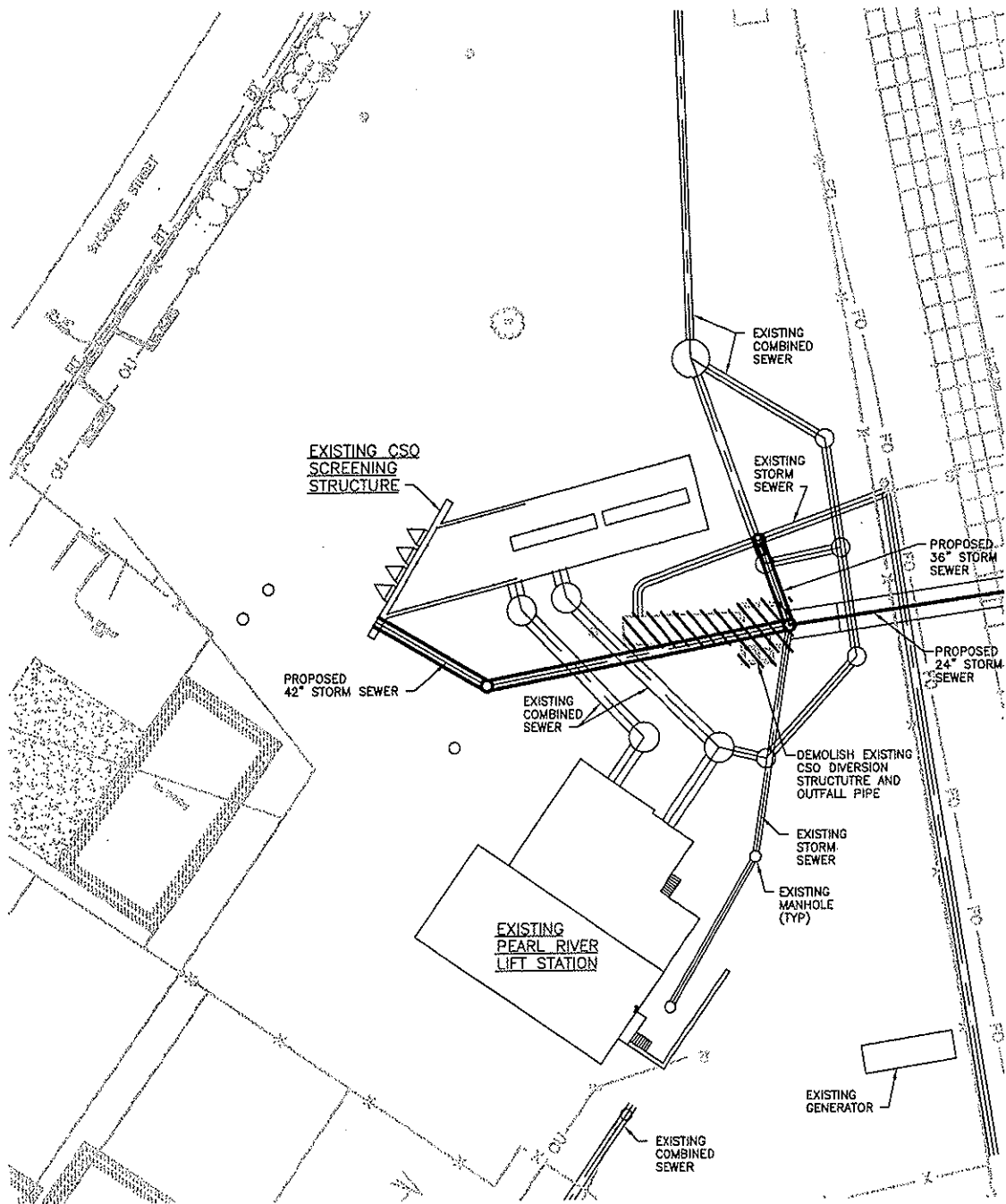
FIGURE 5



GREELEY AND HANSEN

LAFAYETTE, INDIANA
LIFT STATION ELIMINATION
AND SEWER SEPARATION PER
MARCH 2009

REVISED JUNE 2009



PEARL RIVER DIVERSION STRUCTURE DEMOLITION

60 0 60 120 FT 1"=60'

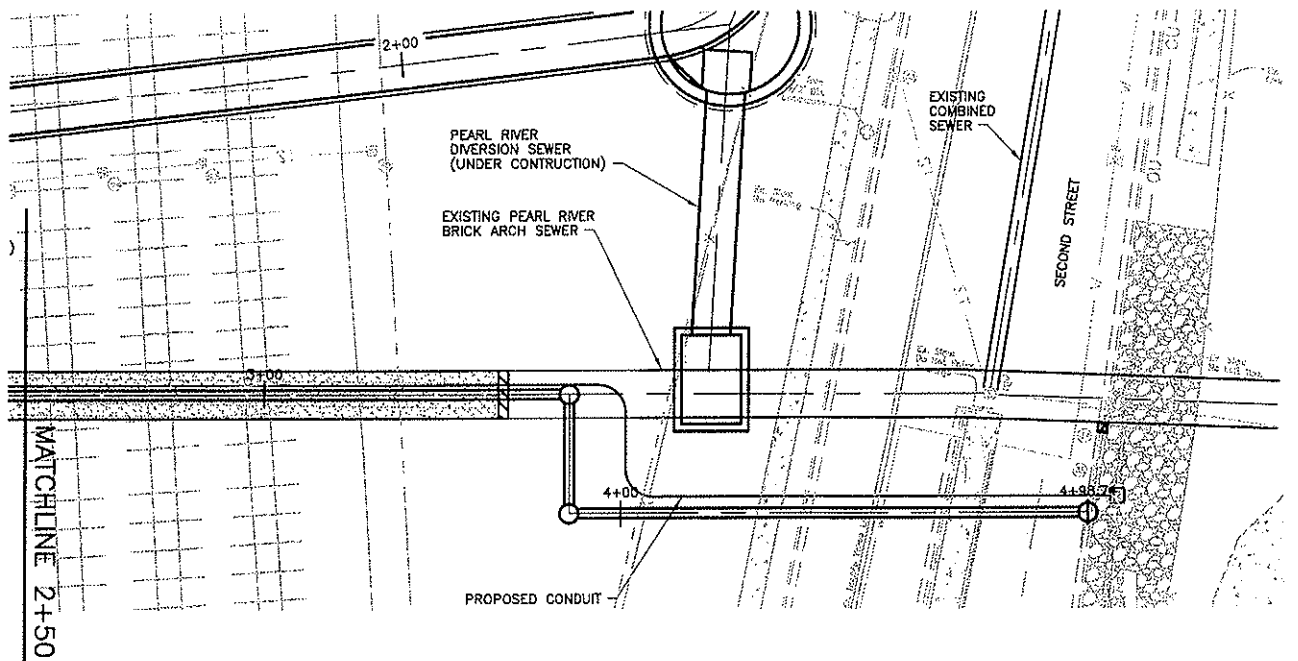
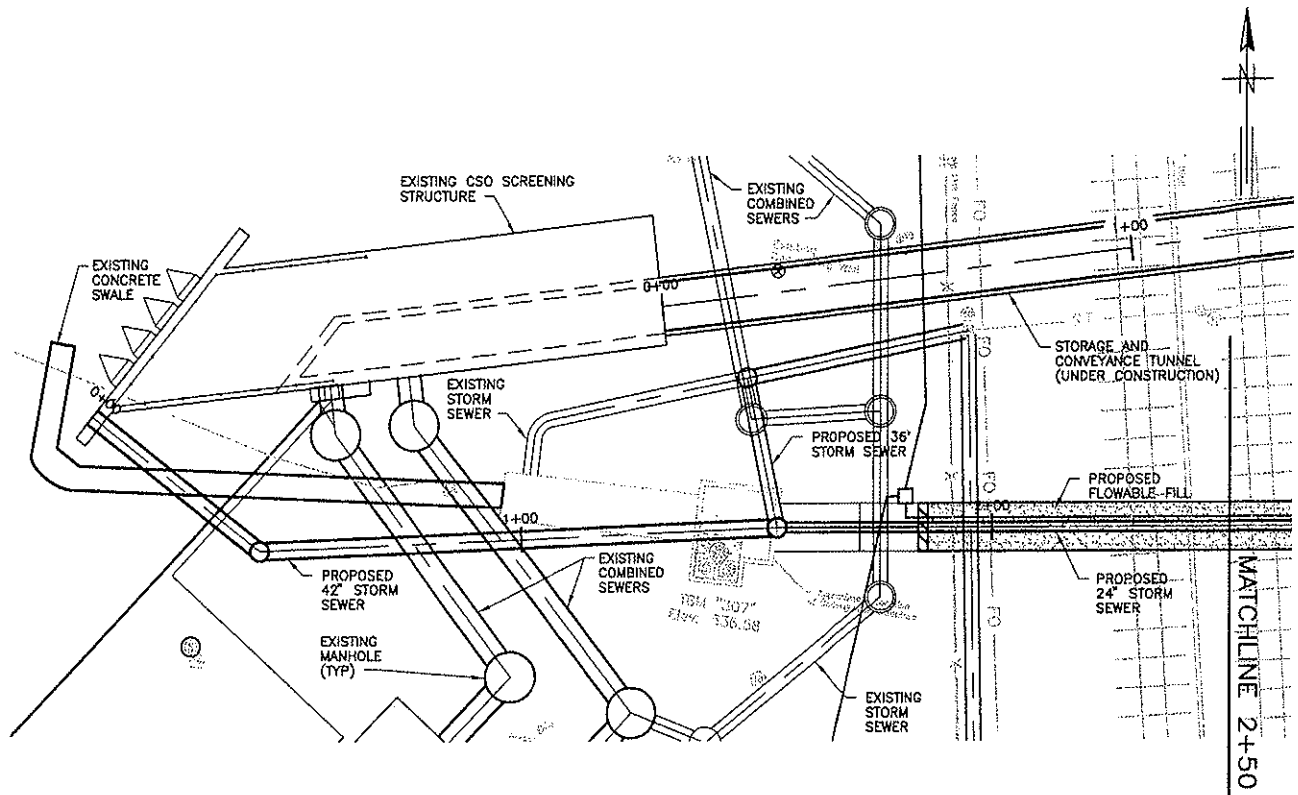
FIGURE 6

LAFAYETTE, INDIANA
LIFT STATION ELIMINATION
AND SEWER SEPARATION PER
MARCH 2009



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REVISED JUNE 2009



PROPOSED STORM SEWERS

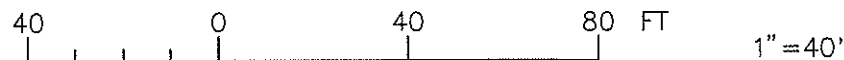


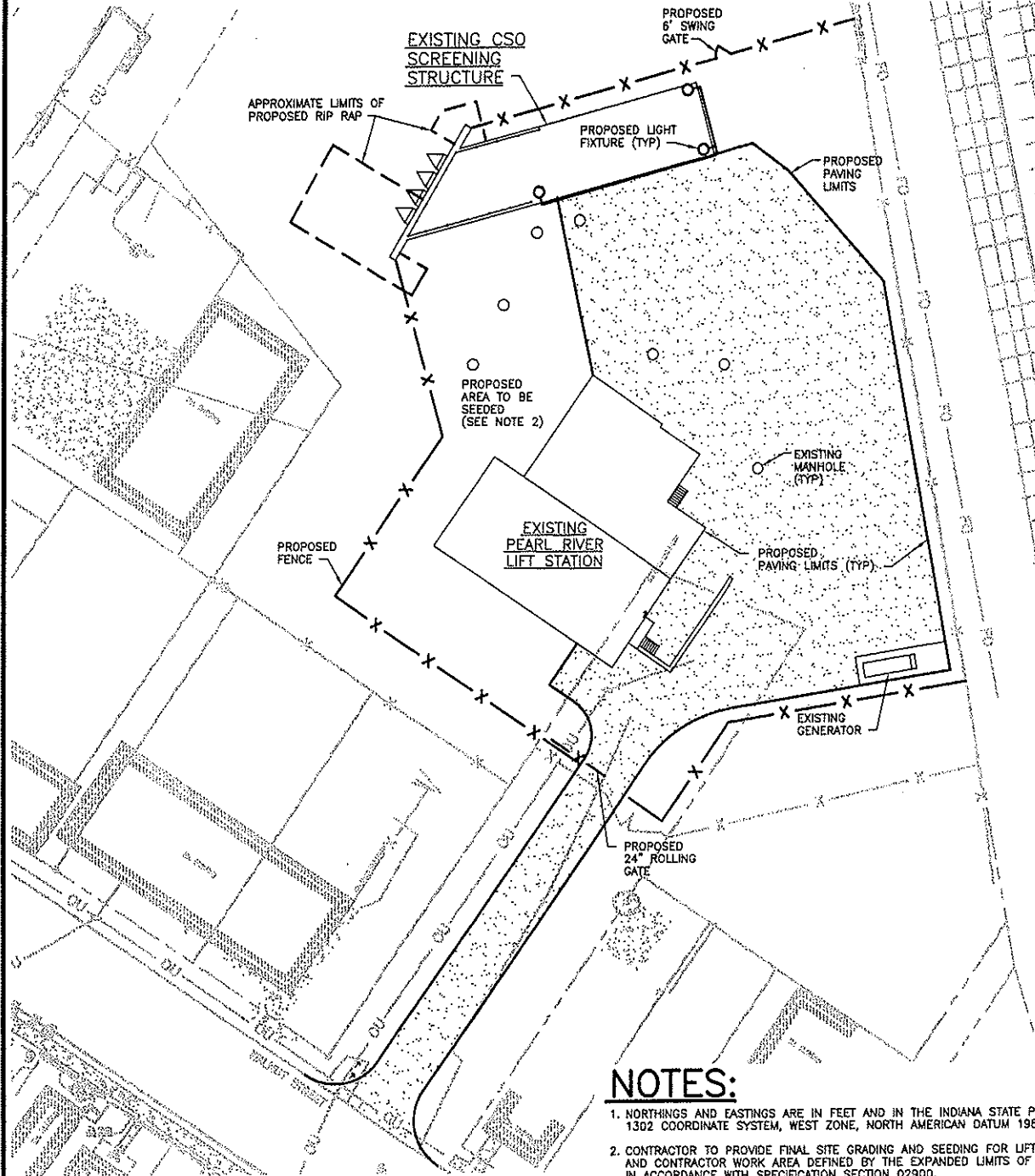
FIGURE 7

LAFAYETTE, INDIANA
LIFT STATION ELIMINATION
AND SEWER SEPARATION PER
MARCH 2009



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REVISED JUNE 2009



NOTES:

1. NORTHINGS AND EASTINGS ARE IN FEET AND IN THE INDIANA STATE PLANE 1302 COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM 1983 (NAD83).
2. CONTRACTOR TO PROVIDE FINAL SITE GRADING AND SEEDING FOR LIFT STATION AND CONTRACTOR WORK AREA DEFINED BY THE EXPANDED LIMITS OF CONSTRUCTION IN ACCORDANCE WITH SPECIFICATION SECTION 02900.
3. CONTRACTOR TO PROVIDE FINAL FENCING IN ACCORDANCE WITH SPECIFICATION SECTIONS 02820.

PEARL RIVER LIFT STATION AND CSO SCREENING STRUCTURE FINAL SITE PLAN



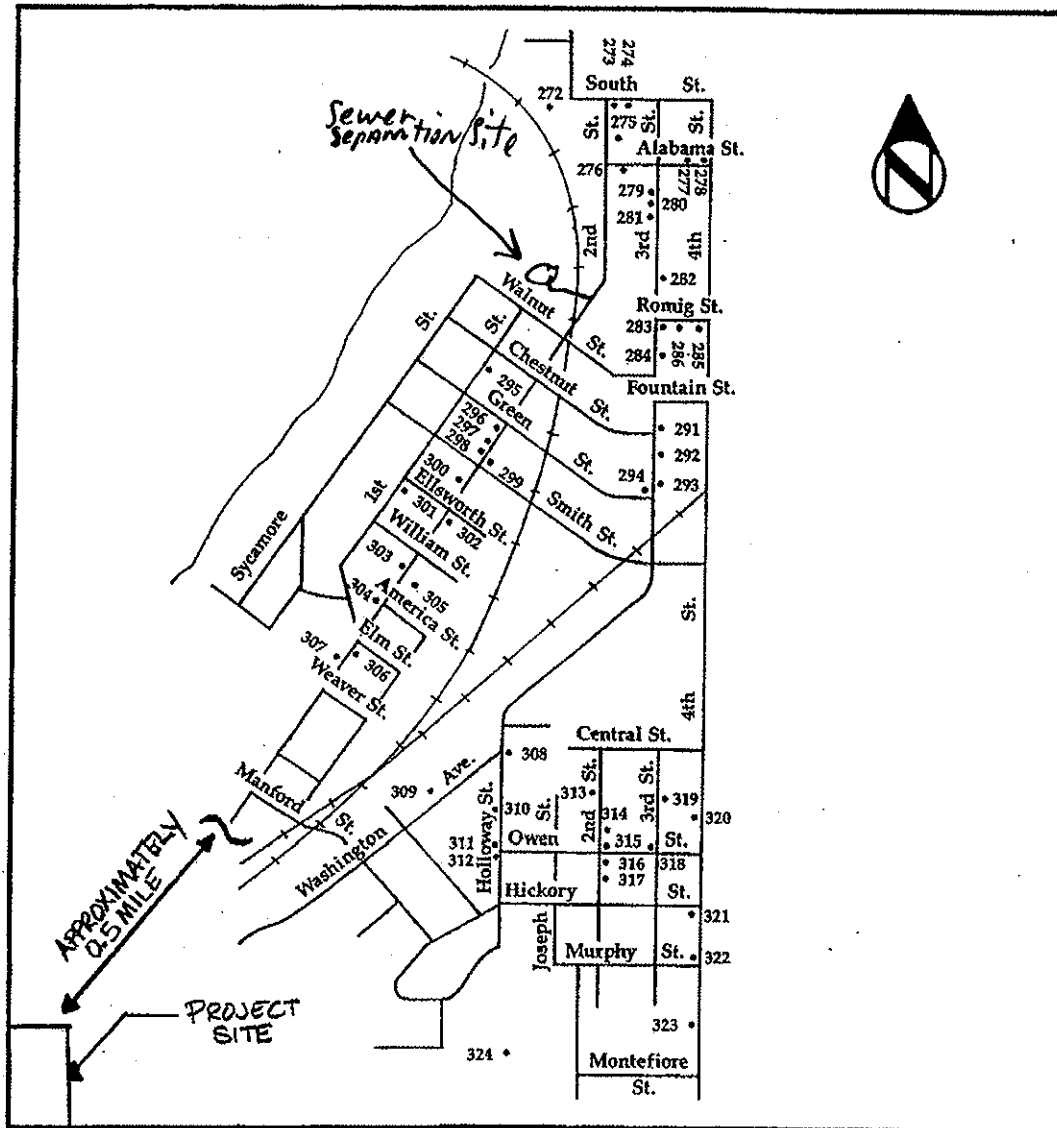
FIGURE 8



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LAFAYETTE, INDIANA
LIFT STATION ELIMINATION
AND SEWER SEPARATION PER
MARCH 2009

Lafayette Scattered Sites (37272-324)



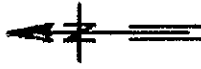
138

HISTORICAL SITES

TAKEN FROM P.138 OF
TIPPECANOE COUNTY INTERIM REPORT
NO SCALE
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FIGURE 9

CITY OF LAFAYETTE, INDIANA
AERATION BLOWER PER
MARCH 2009



Fairfield Township (25001-041)

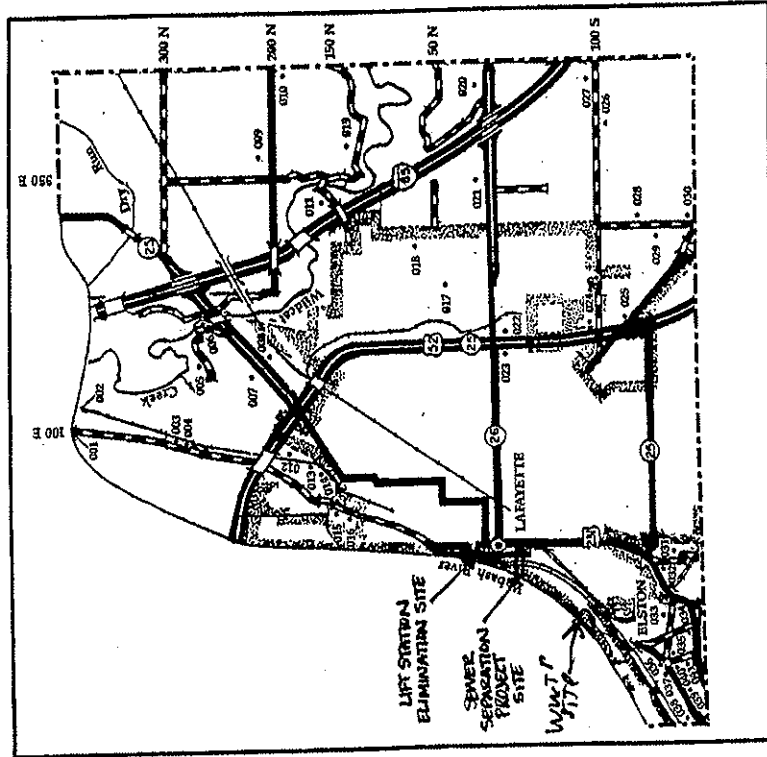


FIGURE 10

FIGURE 10

TAKEN FROM P.60 OF TIPPECANOE COUNTY INTERIM REPORT
NO SCALE

HISTORICAL DISTRICTS

GREELEY AND HANSEN LLC

Fairfield Township is located in north central Tippecanoe County and includes the city of Lafayette. French traders first came to the area during the early 1800s and established trading posts (25006) along Wildcat Creek. Permanent settlers, attracted by the fertile land and access to both Wildcat Creek and the Wabash River, began to arrive by about 1817.

Daniel Isley and Henry Ely, both Pennsylvania natives, were two of the township's prominent early settlers. Isley operated a flour mill, sawmill and still along Wildcat Creek. The Isley family cemetery (25019) is located along the creek.

Ely also settled near Wildcat Creek. The family's log house was replaced by the present homestead (25009) in 1847. This impressive brick house was placed in the National Register of Historic Places in 1976.

Settlement was also occurring during this time along the Wabash River. In 1825 the town of Lafayette was laid out by William Digby on the river's eastern bank. The tiny village began to develop into an important commercial center with the completion of the Wabash and Erie Canal (25005) through the township in 1843.

During the next three decades, the canal provided access to distant markets for the area's farmers. The resulting prosperity is reflected in the township's collection of late nineteenth-century architecture. Two houses (25003, 25021), built between 1860-1870, are typical of the large brick homes found throughout the township.

As the canal declined, the railroads prospered. The expansive train shops (25012), sheds (25013, 25015) and the Menon Railroad Bridge (25002) attest to the railroad's increasingly important role in the township's economy.

CITY OF LAFAYETTE, INDIANA
LIFT STATION ELIMINATION AND
SEWER SEPARATION PER
JUNE 2009

Lafayette Scattered Sites (37181-224)

SHEET 1 of 2

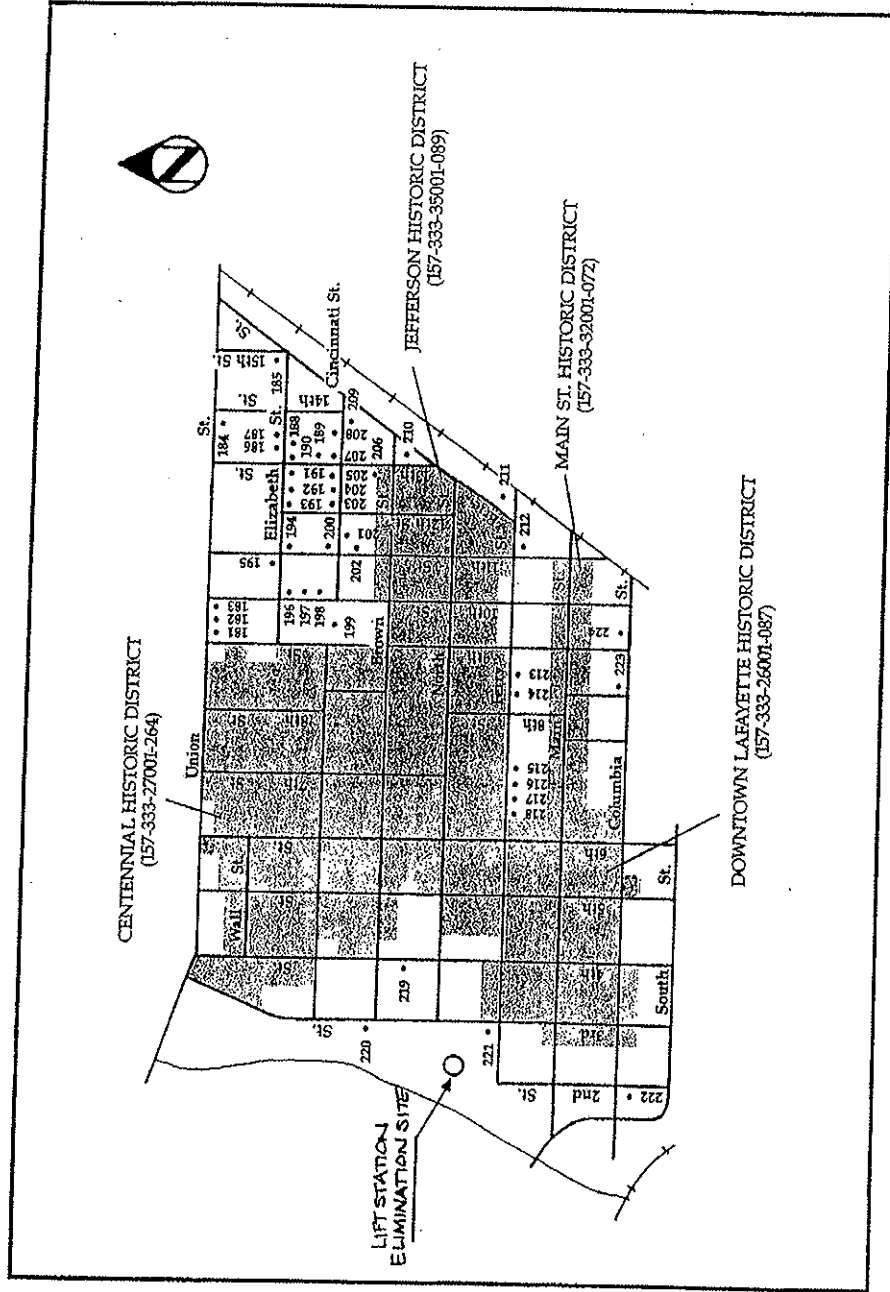


FIGURE 11

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TAKEN FROM P.132 OF TIPPECANOE COUNTY INTERIM REPORT
NO SCALE

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HISTORICAL DISTRICTS

CITY OF LAFAYETTE, INDIANA
LIFT STATION ELIMINATION AND
SEWER SEPARATION PER
MARCH 2009

FIGURE 11